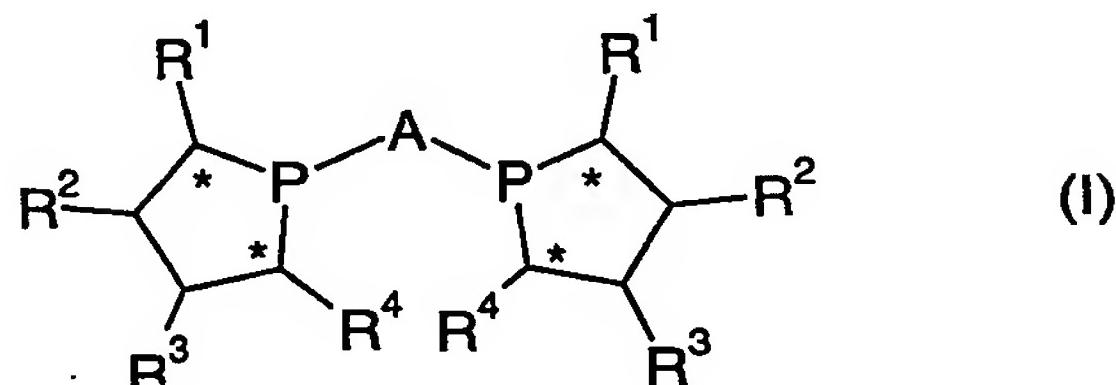


## Claims:

1. Process for preparing enantiomerically enriched compounds of the general formula (I),

5

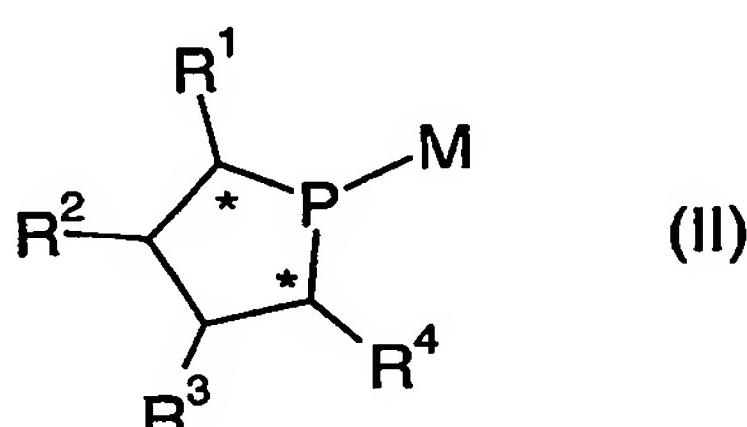


where

\* indicates a stereogenic centre,

R<sup>1</sup> and R<sup>4</sup> are each, independently of one another(C<sub>1</sub>-C<sub>8</sub>)-alkyl, HO-(C<sub>1</sub>-C<sub>8</sub>)-alkyl, (C<sub>1</sub>-C<sub>8</sub>)-alkoxy,10 (C<sub>2</sub>-C<sub>8</sub>)-alkoxyalkyl, (C<sub>6</sub>-C<sub>18</sub>)-aryl, (C<sub>7</sub>-C<sub>19</sub>)-aralkyl,(C<sub>1</sub>-C<sub>8</sub>)-alkyl-(C<sub>6</sub>-C<sub>18</sub>)-aryl, (C<sub>3</sub>-C<sub>8</sub>)-cycloalkyl,(C<sub>1</sub>-C<sub>8</sub>)-alkyl-(C<sub>3</sub>-C<sub>8</sub>)-cycloalkyl,(C<sub>3</sub>-C<sub>8</sub>)-cycloalkyl-(C<sub>1</sub>-C<sub>8</sub>)-alkyl,15 R<sup>2</sup> and R<sup>3</sup> are each, independently of one another, H,(C<sub>1</sub>-C<sub>8</sub>)-alkyl, HO-(C<sub>1</sub>-C<sub>8</sub>)-alkyl, (C<sub>1</sub>-C<sub>8</sub>)-alkoxy,(C<sub>2</sub>-C<sub>8</sub>)-alkoxyalkyl, (C<sub>6</sub>-C<sub>18</sub>)-aryl, (C<sub>7</sub>-C<sub>19</sub>)-aralkyl,20 (C<sub>1</sub>-C<sub>8</sub>)-alkyl-(C<sub>6</sub>-C<sub>18</sub>)-aryl, (C<sub>3</sub>-C<sub>8</sub>)-cycloalkyl,(C<sub>1</sub>-C<sub>8</sub>)-alkyl-(C<sub>3</sub>-C<sub>8</sub>)-cycloalkyl,(C<sub>3</sub>-C<sub>8</sub>)-cycloalkyl-(C<sub>1</sub>-C<sub>8</sub>)-alkyl,A is a C<sub>2</sub> bridge in which two carbon atoms have sp<sup>2</sup> hybridization,

by reacting compounds of the general formula (II),



where

R<sup>1</sup> to R<sup>4</sup> can be as defined above,

25 M is an alkali metal or a trimethylsilyl group,

with compounds of the general formula (III),

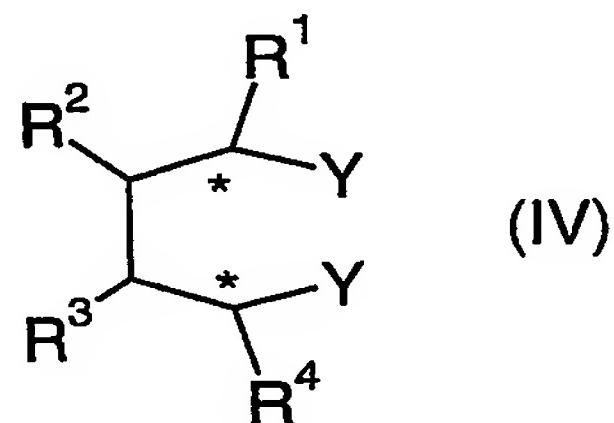


where

A is as defined above and

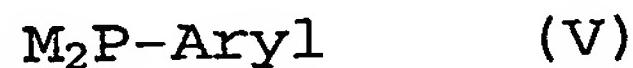
the radicals X are each, independently of one another,  
5 a nucleofugic leaving group,  
characterized in that the compounds of the general  
formula (II) are prepared by reacting compounds of the  
general formula (IV),

10



where

R<sup>1</sup> to R<sup>4</sup> are as defined above and  
the radicals Y are each, independently of one another,  
15 a nucleofugic leaving group,  
with compounds of the general formula (V),



20

where

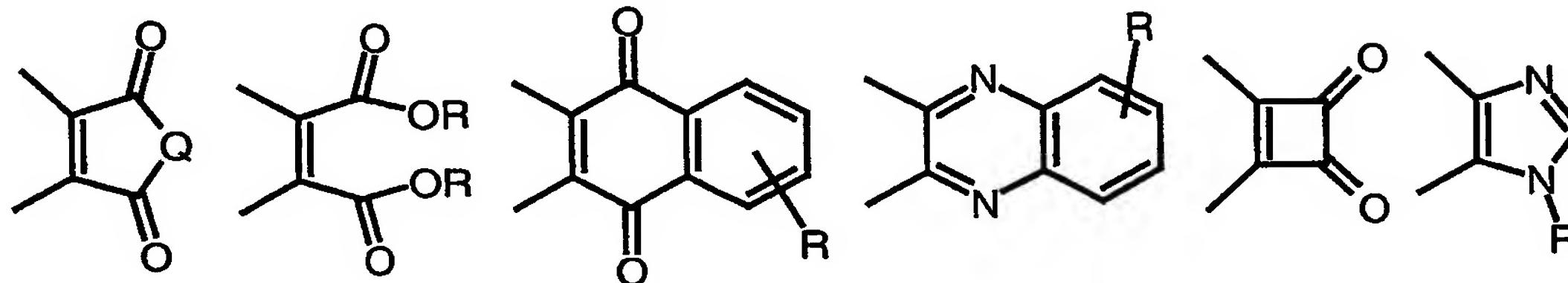
M is an alkali metal and Aryl is a (C<sub>6</sub>-C<sub>18</sub>)-aryl or  
((C<sub>1</sub>-C<sub>8</sub>)-alkyl)<sub>1-3</sub>-(C<sub>6</sub>-C<sub>18</sub>)-aryl radical, and  
subsequently with an alkali metal and, if appropriate,  
additionally with trimethylsilyl chloride,  
25 with the compounds of the formula (V) being obtained  
by reaction of compounds of the general formula (VI),



where

Aryl is as defined above,  
with an alkali metal.

2. Process according to Claim 1,  
characterized in that  
A is a radical from the group consisting of



10 where

R is H, (C<sub>1</sub>-C<sub>8</sub>)-alkyl, (C<sub>6</sub>-C<sub>18</sub>)-aryl, (C<sub>7</sub>-C<sub>19</sub>)-aralkyl,  
(C<sub>1</sub>-C<sub>8</sub>)-alkyl-(C<sub>6</sub>-C<sub>18</sub>)-aryl, (C<sub>3</sub>-C<sub>8</sub>)-cycloalkyl,  
(C<sub>1</sub>-C<sub>8</sub>)-alkyl-(C<sub>3</sub>-C<sub>8</sub>)-cycloalkyl,  
(C<sub>3</sub>-C<sub>8</sub>)-cycloalkyl-(C<sub>1</sub>-C<sub>8</sub>)-alkyl,

15 Q is O, NH, NR.

3. Process according to Claim 2,  
characterized in that  
Q is oxygen or NR, where R can be (C<sub>1</sub>-C<sub>8</sub>)-alkyl,  
(C<sub>6</sub>-C<sub>18</sub>)-aryl, benzyl.

- 20 4. Process according to Claim 3,  
characterized in that  
Q is oxygen or NR, where R can be methyl, ethyl,  
propyl, isopropyl, tert-butyl, phenyl, naphthyl,  
fluorenyl, benzyl.

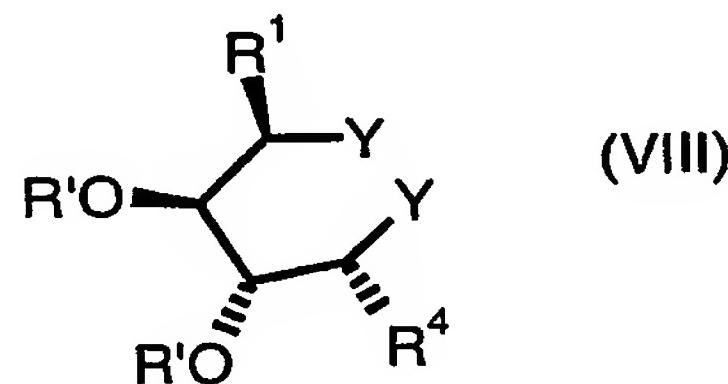
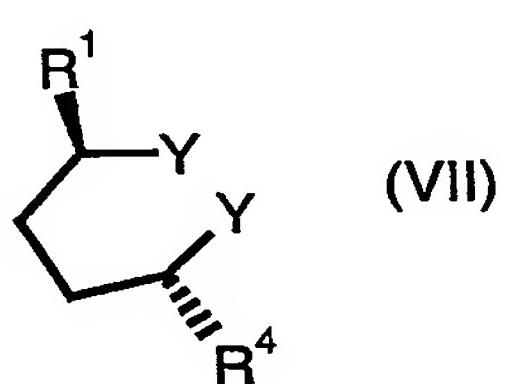
- 25 5. Process according to one or more of Claims 1 to 4,  
characterized in that  
compounds of the formula (IV) in which R<sup>2</sup> and R<sup>3</sup> are  
each H and R<sup>1</sup> and R<sup>4</sup> are each, independently of one  
another, (C<sub>1</sub>-C<sub>8</sub>)-alkyl, HO-(C<sub>1</sub>-C<sub>8</sub>)-alkyl,  
30 (C<sub>2</sub>-C<sub>8</sub>)-alkoxyalkyl are used.

6. Process according to one or more of Claims 1 to 5,  
 characterized in that  
 compounds of the general formula (III) or (IV) in  
 which X or Y is selected from the group consisting of  
 halogen, OTos, OMes, triflate, nosylate, are used.

5

7. Process according to one or more of Claims 1 to 6,  
 characterized in that  
 compounds of the general formula (VII) or (VIII),

10



where

the radicals Y are selected independently from the group consisting of halogen, OTos, OMes, triflate, nosylate,

15

R¹ and R⁴ are each, independently of one another,  
 $(C_1-C_8)$ -alkyl, HO- $(C_1-C_8)$ -alkyl,  $(C_2-C_8)$ -alkoxyalkyl,  
 $(C_6-C_{18})$ -aryl,  $(C_7-C_{19})$ -aralkyl,

20

$(C_1-C_8)$ -alkyl- $(C_6-C_{18})$ -aryl,  $(C_3-C_8)$ -cycloalkyl,  
 $(C_1-C_8)$ -alkyl- $(C_3-C_8)$ -cycloalkyl,  
 $(C_3-C_8)$ -cycloalkyl- $(C_1-C_8)$ -alkyl,

the radicals R' are each, independently of one another,

25

H,  $(C_1-C_8)$ -alkyl, HO- $(C_1-C_8)$ -alkyl,  $(C_6-C_{18})$ -aryl,  
 $(C_7-C_{19})$ -aralkyl,  $(C_1-C_8)$ -alkyl- $(C_6-C_{18})$ -aryl,  
 $(C_3-C_8)$ -cycloalkyl,  $(C_1-C_8)$ -alkyl- $(C_3-C_8)$ -cycloalkyl,  
 $(C_3-C_8)$ -cycloalkyl- $(C_1-C_8)$ -alkyl,

are used for compounds of general formular (IV).

30

8. Process according to Claim 7,

characterized in that

R' is H, methyl, ethyl, propyl, isopropyl, tert-butyl,

phenyl, and

R<sup>1</sup> and R<sup>4</sup> are each methyl, ethyl, propyl, isopropyl, tert-butyl, phenyl.

9. Process according to one or more of the Claims 1 to 8,  
5 characterized in that  
the alkali metal used is lithium.

10. Process according to one or more of Claims 1 to 9,  
characterized in that  
the reaction of compounds of the general formula (VI)  
10 with alkali metals is carried out in an aprotic polar  
solvent.

11. Process according to one or more of Claims 1 to 10,  
characterized in that  
the reaction of the compound (IV) with the compound  
15 (V) is carried out at a temperature of from -25°C to  
+40°C.

12. Process according to one or more of Claims 1 to 6,  
characterized in that  
the reaction of compounds of the general formula (VI)  
20 with alkali metals is carried out at temperatures of  
-10°C to +10°C.

13. Process according to Claim 1,  
characterized in that  
the reaction is carried out in a one-pot variant.